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Claims

[c1] A computed tomography assembly comprising:
an x-ray gantry assembly;
an x-ray source projecting a beam of x-rays;
a detector assembly positioned opposite said x-ray source, said detector assembly receiving said beam of x-rays after said beam of x-rays pass through an object;
a control mechanism in communication with said x-ray source and said detector assembly, said control mechanism comprising logic adapted to:
execute at least one scout scan of said object, said at least one scout scan producing a first scout scan image;
generate an elliptical patient model based on said first scout scan image;
match said elliptical patient model to a phantom diameter approximation;
generate a dose report based on said phantom diameter approximation; and
display said dose report on a display, said display in communication with said control mechanism.

[c2] A computed tomography assembly as described in claim 1, wherein said at least one scout scan comprises two

orthogonal scout scans.

[c3] A computed tomography assembly as described in claim 1, wherein said at least one scout scan comprises:
a lateral scout scan; and
an anteroposterior scout scan.

[c4] A computed tomography assembly as described in claim 1, further comprising:
an elevation reference in communication with said control mechanism; and
wherein said logic is adapted to:
utilize said elevation reference in combination with said at least one scout scan to generate said elliptical patient model.

[c5] A computed tomography assembly as described in claim 1, further comprising:
at least one laser position measurement device in communication with said control mechanism; and
wherein said logic is adapted to:
utilize said laser position measurement device in combination with said at least one scout scan to generate said elliptical patient model.

[c6] A computed tomography assembly as described in claim 1, further comprising:

at least one sonic displacement device in communication with said control mechanism; and

wherein said logic is adapted to:

utilize said sonic displacement device in combination with said at least one scout scan to generate said elliptical patient model.

[c7] A computed tomography assembly as described in claim 1, wherein said logic is adapted to further comprise:

utilizing said elliptical patient model to generate a dose minimized imaging sequence.

[c8] A computed tomography assembly as described in claim 7, wherein said dose report is generated by combining said phantom diameter approximation with said dose minimized imaging sequence.

[c9] A computed tomography assembly as described in claim 7, wherein dose minimized imaging sequence comprises:

adjusting a bowtie element positioned within said x-ray source to minimize radiation exposure to said object.

[c10] A computed tomography assembly as described in claim 7, wherein dose minimized imaging sequence comprises:

adjusting a current modulation of said x-ray source to minimize radiation exposure to said object.

[c11] A computed tomography assembly as described in claim

7, wherein dose minimized imaging sequence comprises:
calculating object centering information;
adjusting a current modulation of said x-ray source to compensate for said object centering information.

[c12] A computed tomography assembly as described in claim 7, wherein dose minimized imaging sequence comprises:
calculating object centering information;
adjusting a bowtie element positioned within said x-ray source to compensate for said object centering information.

[c13] A computed tomography assembly comprising:
an x-ray gantry assembly;
an x-ray source projecting a beam of x-rays;
a detector assembly positioned opposite said x-ray source, said detector assembly receiving said beam of x-rays after said beam of x-rays pass through an object;
a control mechanism in communication with said x-ray source and said detector assembly, said control mechanism comprising logic adapted to:
execute at least one scan of said object, said at least one scan producing a first scan image;
generate an elliptical patient model based on said first scan image;
match said elliptical patient model to a phantom diameter approximation;

generate a dose report based on said phantom diameter approximation;

display said dose report on a display, said display in communication with said control mechanism; and

utilize said elliptical patient model to generate a dose minimized imaging sequence.

[c14] 14.A computed tomography assembly as described in claim 13, wherein said dose report is generated by combining said phantom diameter approximation with said dose minimized imaging sequence.

[c15] A computed tomography assembly as described in claim 13, wherein dose minimized imaging sequence comprises:

adjusting a bowtie element positioned within said x-ray source to minimize radiation exposure to said object.

[c16] A computed tomography assembly as described in claim 13, wherein dose minimized imaging sequence comprises:

adjusting a current modulation of said x-ray source to minimize radiation exposure to said object.

[c17] A computed tomography assembly as described in claim 13, wherein dose minimized imaging sequence comprises:

calculating object centering information;
adjusting a current modulation of said x-ray source to compensate for said object centering information.

[c18] A computed tomography assembly as described in claim 13, wherein said at least one scan comprises two orthogonal scout scans.

[c19] A computed tomography assembly as described in claim 13, wherein said at least one scan comprises a contour displacement sensor scan.

[c20] A method of imaging an object utilizing a computed tomography assembly comprising:
executing at least one scout scan of the object, said at least one scout scan producing a first scout scan image;
generating an elliptical patient model based on said first scout scan image using a control mechanism;
matching said elliptical patient model to a phantom diameter approximation using said control mechanism;
generating a dose report automatically based on said phantom diameter approximation; and
display said dose report on a display, said display in communication with said control mechanism.